Fig. 1

$$OH$$

HO

Ent- Estra-1,3,5(10),9(11)-tetraene-3,17 β-diol or (8α,13α,14β,17α)-Estra-1,3,5(10),9(11)-tetraene-3,17-diol

$$HO$$
 $Ent$ -Estra-1,3,5(10),9(11)-tetraene-3,17 α-diol or (8 α,13 α,14 β,17 β)-Estra-1,3,5(10),9(11)-tetraene-3,17-diol

$$HO$$

HO

Ent-Estra-1,3,5(10)-triene-3-ol

or

 $(8 \alpha,9 \beta,13 \alpha,14 \beta)$ -Estra-1,3,5(10)-triene-3-ol



#### ZYC-2

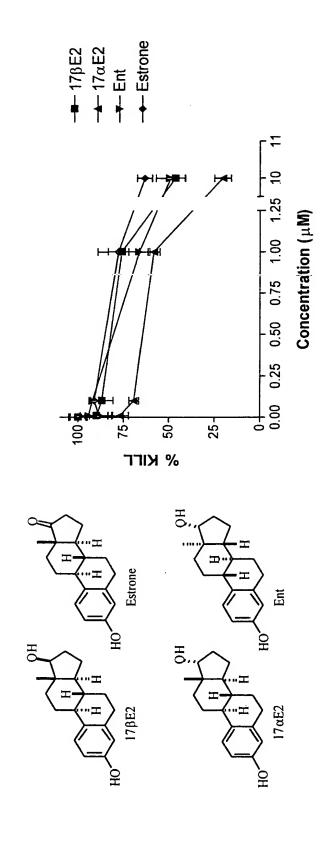
ZYC-4

ZYC-27

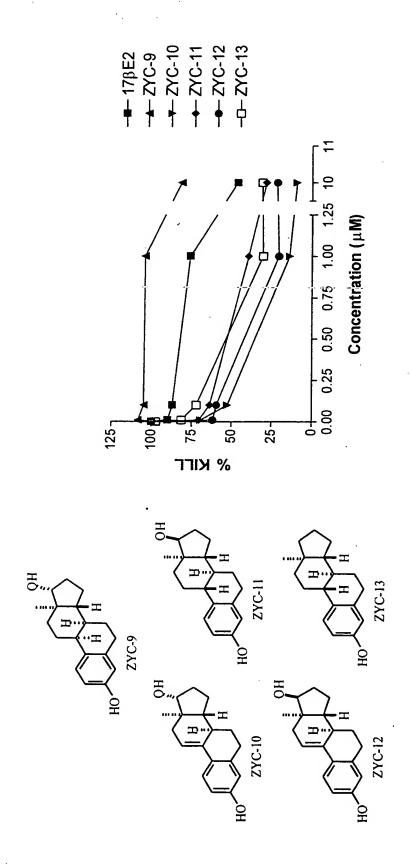
#### SAR for Polar Substituents on Steroid C-Ring SAR for Phenoxy Radical Stabilization by Extended Resonance Delocalization

— 17βE2 → ZYC-1 → E1240 →- E2555 0.25 0.50 0.75 1.00 1.25 10 Concentration (µM) 0.0 1507 % **КІГГ** 25-E 2560 E 2540

### SAR for Absolute Configuration of 17β-Estradiol SAR for C-17 Substituents



## SAR of Unnatural Steroid Enantiomers

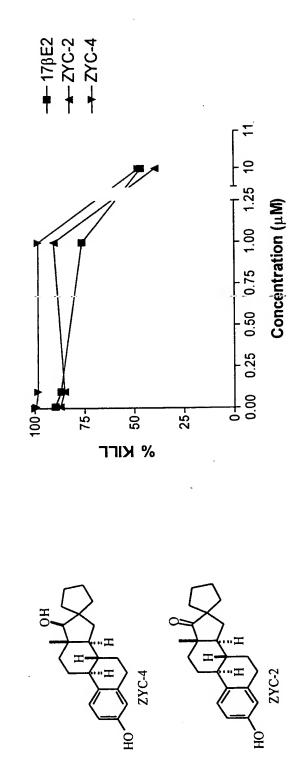


НО

$$R_z$$

# SAR for Bulky D-Ring Hydrophobic Substituents

Fig. 6



ZYC-4: Spiro[cyclopentane-1,16'-estra[1,3,5(10)triene]-3'17'-diol; CA Reg. No. 157302-44-8 ZYC-2: Spiro[cyclopentane-1,16'-estra[1,3,5(10)triene]-3'-ol-17'-one; Unknown